



Tractor with Locomotive Type Snow Plow
on Route 13, Lawrenceville-Princeton

The Highwayman Is Out For More and Better Roads in New Jersey

March, 1922
Vol. I
No. 8

A 100 Per Cent. Success

The Highway Association Convention held in Trenton February 15th to 18th exceeded in size, interest shown, and in results, anything which had been anticipated by the most optimistic.

Every part of the long and complete program was well attended. The discussions made it plain that the boys who are actually doing the work are wide awake and "on their toes" concerning anything that will enable them to do better or faster work.

The "Second Annual Dinner" of the Highway Association, which was held in the evening, February 16, was also an unqualified success. More



"Our Flag", as it was displayed from
the Stacy-Trent Hotel at Trenton

than five hundred and fifty "highwaymen", contractors, materials and supply men, officials and guests sat down to the excellent meal provided by the Dinner Committee, of which Bragg was chairman and Charlie Fishberg (as usual) secretary.

NOTE THIS!

A full record of the papers presented on various subjects, and comments on them, will be given in the Supplements accompanying the next few issues of the HIGHWAYMAN. This month "The Calyx Core Drill" and "Organization and Operation of Motor Vehicles Equipment" are presented; next month will follow "The Merits of Fine Gravel As Course Aggregate in Concrete For Roads."

Echoes of the Convention—By an "Old Timer"

Our 1922 Convention has passed into history and we are all spurred on to do better work by its influence and words spoken there.

Since leaving its pleasant associations, this thought has accured to me: I wonder boys, if we duly appreciate the efforts and labor put forth in our behalf by all these good people—the labors and thought of our big hearted chiefs, Messrs. Wasser and Bedwell, Col Whittemore and other members of the Commission, our Division Engineers, Professor Gage and his laboratory assistants, not forgetting our own Lee and Charlie. It is no cinch to organize and arrange a good big dinner like ours; and the incidentals, besides the other various features of the Convention—I wonder boys, do we appreciate all these things? Let us do so now and by our united efforts and interest in our work show that their work has not been in vain—that we are glad to have had the opportunity

to be there and come in contact with them. Let us realize that we can only expect to get out of life what we actually put into it. If we put enthusiasm and cheerfulness and loyalty in our work, sooner or later, it will come back to us in the shape of larger usefulness and reward. This may sound somewhat old-fashioned to some of the young boys; but we all learn these things as the days go by. So let us now all rise up and give them a vote of thanks for their many kindnesses and trouble in our behalf.

What a wonderful dinner that was, and such an elegant array of speakers? Do you know, there are a good many real singers among these Highwaymen? Why can't we have a glee club? The material is there all it needs is practice and development. I venture to say that there are several John McCormacks and Carusos in that bunch (Mr. Muir please note).



BEFORE—



AND AFTER

A story without words (except those used by the owner of the car in the first picture). Route 2, Section 2, Station 1215; "before" May 14, '20; "after" December 28, '21.

The Highwayman

Published Monthly By The
State Highway Department, at Trenton, N. J.

The HIGHWAYMAN will be sent free upon application
to any citizen of New Jersey who is interested in
"More and Better Roads For New Jersey!"

THE HIGHWAYMAN

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Let Us Know

How YOU Have Found the Roads!

With the increased investment of the public in good roads, it becomes more and more important to keep them open to traffic *all year round*.

The Department has made a particular effort this year to maintain traffic. In this effort we have had the splendid co-operation of every employee of the Department; and of the members of the Contractors, and their employees.

As this is the first year that such an intensive snow-removal program has been carried out, we are anxious to "check up" on it in every way possible—particularly from the *public's* point of view.

What has been *your* experience this winter?

We are just as glad to get helpful criticism, or practical suggestions, as to have letters like the following.

Let us hear from *you*.

A Letter From Dr. Lane

Tuckerton, N. J., 2-8-22.

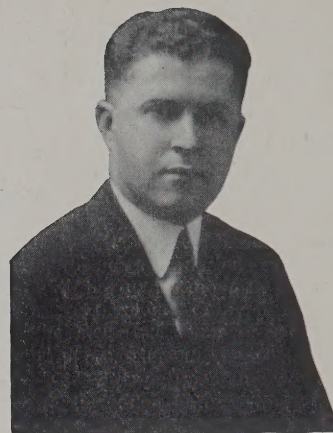
Mr. Thomas J. Wasser
State Engineer, Trenton, N. J.

Dear Sir:

I am taking the liberty to write and tell you how much I appreciate the efforts that have been made to keep the state highway passable this winter in this neighborhood. I am a country doctor and have to make use of the roads daily and in my thirty-three years of practice I have never found travel so good as this year. The idea of removing snow immediately is a most excellent plan and greatly saves the surface of the road. Deep frozen ruts are thereby eliminated and traveling made as good as in the summertime. I hope this kind of care will continue.

Very truly yours,

J. L. Lane.



Chas. Fishberg
Assistant Chief Clerk

If you have any occasion to come into contact with the "home office" at Trenton, you know "Charles" without our having to introduce him to you.

One of Charlie's chief specialties is being Secretary of State Highway Convention Committees; he does this up brown as everyone who attended the Highway Association Convention last month, can testify.

Mr. Fishberg is another Trenton boy. He was born in Trenton in '96; and graduated from the Trenton High School in 1913. He took the Secretarial course at Rider College in '14; and followed this up with a Sheldon Efficiency Course; and still another in Pace and Pace Accounting and Business Administration.

In 1918 Mr. Fishberg was Secretary of the Rent Profit-sharing Committee; he is one of the organizers and a Director of the Trenton Y. M. H. A.; and First Vice President of the State Federation of Y. M. & Y. W. H. A's.

Charlie's regular duties include all civil service matter; all employees' records; the covering of all Commission meetings; and general administration matters in connection with the Chief Clerk. Outside of this, and the several activities mentioned above; he leads a life of indolence and ease.

(P. S. We don't pin "morals" to many Highwayman tales; but it may be of interest to some younger men in the Department, to note the fact that Charlie kept on investing in *fuel for his think-tank*, after he had left school and gone to work.)

And Our Reply

State of New Jersey
State Highway Commission
Trenton

February 11, 1922.

John Lewis Lane, M. D.,
Tuckerton, N. J.

My dear Doctor Lane:

Acknowledgment is made of your letter of February 8th, expressing your appreciation of the efforts of this Department towards opening the roads after the recent snow storms.

Those actually working in this snow removal program, that is, the Department employees and contractors of the State, working in conjunction with our forces, will certainly appreciate the commendation expressed in your letter, as same will be made know to them. Snow removal requires a great amount of persistent, steady work on the part of the men, but comment such as yours assures us that our efforts are appreciated. Thanking you for your letter, I remain

Very truly yours,

T. J. Wasser,
State Highway Engineer.

NOTE:—Read Mr. C. S. Edwards' letter on page 3.



Col. Schwarzkopf
Chief of State Constabulary Forces

We are glad to introduce to readers of the Highway-man our good friend Col. Schwarzkopf. The experience of the Highway Department has been that with the col. "co-operation" is not only a theory, but is also practiced.

"Co-operation"

Being in Substance a Few Remarks Offered on the Occasion of the Highway Dinner

In Union there is strength and one of the greatest qualities and manifestations of that strength finds itself in CO-OPERATION.

In acknowledgement of this axiom it has been one of the most emphasized phases of the instruction of the members of the New Jersey State Police to impress upon each individual the absolute and imperative necessity of the practice of co-operation in each of its elements.

With reference to the Highway Department this instruction has encompassed the opportunities of the State Police to observe and remedy temporarily unsatisfactory road or bridge conditions, making report of same to highway officials without delay, reporting and guarding temporarily dangerous spots or conditions along the roads, reporting storm damages, road encroachments, new lunch resorts, new gasoline stations, and new refreshment booths, and regulating traffic and parking of cars along the highways, and preventing traffic congestion under those exceptional circumstances that might cause it.

On the other hand co-operation requires reciprocation. We have endeavored to establish the New Jersey State Police on the highest ethical standards. We have endeavored to impress the men individually and collectively with the privilege of service, the quality of honor, the ethical reward of duty well performed, the benefit of fidelity and the finesse of courtesy and consideration. These are elements easy to acknowledge but hard to practice and transgressions are frequently unintentional and go by unnoticed. Casual acquaintances are profuse in their praises but it requires the trust friendship and most sincere co-operation to point out ones faults.

Let us request of you that you give the State Police that most sincere co-operation and by telling us our faults and pointing out our transgressions assist us to a recognition and accomplishment in our field approaching that enviable position held in the Highway field by the New Jersey Highway Department.

NEW JERSEY STATE HIGHWAY DEPARTMENT

March 1st, 1922

Executive

HON. EDWARD I. EDWARDS, Governor

The State Highway Commission
and

THOMAS J. WASSER, State Highway Engineer

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CHAS. FISHBERG - - - Assistant Chief Clerk

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G. R. MOORE, Ass't Construction Engineer

R. A. MEEKER - - - Right of Way Engineer

C. A. MEAD - - - Bridge Engineer

THOMAS GEORGE - - - Acting Supt. of State Labor

C. A. BURN - Northern Division Construction Engineer

H. D. ROBBINS - Central Division Construction Engineer

J. A. WILLIAMS Southern Division Construction Engineer

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EDWARD E. REED, Assistant State Highway Engineer

A. W. MUIR - - Superintendent of Maintenance

N. C. APPLEGATE - - Superintendent of Equipment

A. D. BULLOCK - - - Projects Engineer

H. C. SHINN - - Engineer of Special Assignments

TESTING LABORATORY

R. B. GAGE, Chemical Engineer

J. G. BRAGG - - - Senior Testing Engineer

F. H. BAUMANN - - - Senior Testing Chemist

Announcement!

Important to All Road Users

The New Jersey State Highway Commission will have an exhibit at the Atlantic City Hotel Exposition, Steel Pier, Atlantic City, New Jersey, April 24 to 29, 1922. The exhibit will be located at Booth 84; and will consist of Highway materials; photographs; literature; and plans and specifications.

Every owner of a car who visits Atlantic City between the dates of April 24th and 29th should make a point of seeing this extremely interesting exhibit.



CORNELIUS S. EDWARDS
JERSEY CITY, N. J.

February 5th, 1922.

Mr. Thomas J. Wasser, State Engineer,
State Highway Department,
Trenton, N. J.

Dear Tom:

I want this letter to call to your attention the mechanics which were sent on from Trenton to follow up the trucks on our different routes during the last snow storm. A more efficient, hard working and enduring crowd of men, I do not think can be equalled in the State of New Jersey. They not only worked with their heads but with their hands and gave us the greatest amount of assistance.

Very truly yours,

C. S. Edwards.

The names of the Men are:

William Ball, Montclair-Buter, Route No. 8.

C. Richmond, Caldwell-Parsippany-Paterson, Route No. 12.

M. L. Smith, Morristown-Whippany-Caldwell, Route No. 12.

The Highwayman

Building the Road Across Mullica River Marshes

Bids for the State Highway from Mullica River to New Gretna, Route No. 4 (Mullica River Section) of New Jersey Highway System, were received April 26, 1920, and the contract was awarded to the firm of Ross and Whelan, Inc., whose bid was the lowest submitted. Actual construction work was started May 26, 1920, and final completion of the contract was consummated July 1, 1921.

Conditions surrounding the improvement of this highway were unusually intricate inasmuch as the old road across the Mullica River marshes was exceedingly low and narrow, making it almost impossible for two machines to pass a given point at the same time.

The new road was constructed on the bed of the old highway and the width was expanded to a distance of thirty feet between the paralleling guard rails. The length of the road as it now exists is 2.75 miles and the average fill is about three and one-half feet. This fill was made of sand with an eight inch gravel top. One of the abnormal conditions encountered during the progress of the work was the continual subsiding of material, more than twenty feet of material being deposited in one place to counteract sinking.

Approximately three and one-half miles intervened between the borrow pits which were located near each end of the job. Two Erie steam shovels, one at each pit, were operated during the first five months of construction. One shovel loaded four trains of 24 inch gauge railway, each train consisting of 10 Koppel dump cars, hauled by a Plymouth locomotive. The other shovel loaded eight 3½ ton dump trucks. Records show that an average of about 700 cubic yards of material was hauled per day. One shovel with the industrial railway completed the work.

Another condition harassing utilization of the road before the improvements was sporadic inundation. Formerly, it was a common occurrence for high tides to overflow the old road to such an extent that automobiles could not get through.

Experiences of this kind were met during the work of improvement. It was found that during a bad storm the heavy tide would wash away the banks of the new road. The contractors resorted to an ingenious and thoroughly effective solution of the problem by cutting sod from the meadows and placing it on the slopes. This sod consisted of tough meadow grass, the roots of which averaged eight inches in thickness when cut, and provided



Erie steam-shovel lowering three ton section of re-inforced concrete culvert into position.

an impenetrable barrier against wash-outs.

A novel incidental feature of the construction of this highway was the success attained in keeping the road open throughout the entire period of the work. This feat was accomplished by filling in one side of the road at a time, thus affording vehicular traffic ready accessibility during the whole time consumed by the improvement.

The treacherous nature of the ground was strikingly manifested by an occurrence involving the transportation of a steam shovel from one borrow pit to the other. It veered slightly from the centre of the road, causing the fill on the side to give way; as a consequence the shovel slid off into the meadow. Its return to the centre of the road was accomplished in the record time of five hours—hours of strenuous and laborious work.

The road was shaped up by the use of a road scraper, hauled by a tractor. When the work was nearly completed

the scraper was put behind a truck. As a result of this innovation exceedingly fast time was made.

A culvert consisting of a double row of 54 inch re-inforced concrete was put in position to drain one of the creeks. This pipe, each weighing three tons, was placed on the timber grillage by means of the steam shovel.

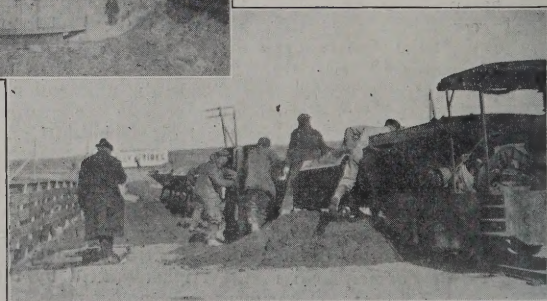
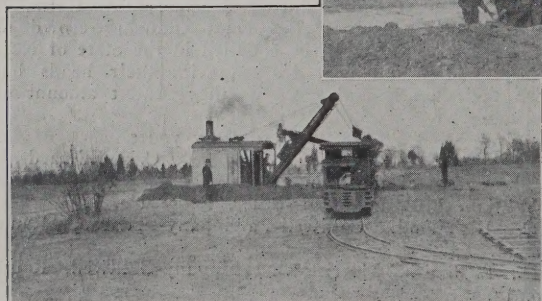
Some Interesting Facts About the Delaware River Bridge

Length of main span, longer than any existing suspension bridge in the world, 1,750 feet; clearance above mean high water, 135 feet; top of towers above mean high water, 385 feet; diameter of each cable, 30 inches; each cable contains 16,531 wires; diameter of each wire, 0.2 inch; total length of each cable, 3,534 feet; total weight of cable, 6,100 tons; total length of wire, 22,100 miles; total quantity of steel, 50,000 tons; total quantity of masonry, 320,000 cubic yards; total length of bridge, 1.82 miles; vehicular capacity of bridge per hour, 6,000; width of roadway between curbs, 57 feet (3 feet less than width of Market street); tracks for surface cars, 2; tracks for rapid transit, 2; footpaths (each 10 feet wide, elevated over trolley lines) 2; total number of vehicular traffic lanes, 10; total width of bridge over all, 125 feet.

Photos to the right, and below, show steam-shovel filling Koppel dump cars at



borrow pit. These were hauled to the job by a Plymouth locomotive, and dumped over the edge of the old road.



Highway Engineering Course in the University of Pennsylvania

The five men who took the brief course in highway engineering by the Civil Engineering Department of the University of Pennsylvania, January 23 to February 10, feel that they were greatly benefitted by the course. Attached is a copy of a letter which was addressed to Professor M. S. Ketchum and signed by all of the men who took the course including those from New Jersey.

We understand that the men who came from Virginia to take the course are to write a summary of their impressions of the course in order that it may be used as a guide in preparing a similar course for the benefit of the Highway Department of Virginia next year and in future years.

In our opinion it is a thought well worth entertaining for the New Jersey Highway Department.

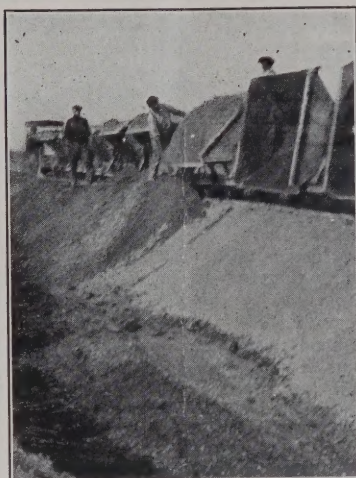
The boys say that eight hours a day of school work with a few additional hours in the evening preparatory for the next day's lectures is no cinch and if it were not for the highly interesting lectures which we received and an occasional humorous incident that relieved the serious part of the work it would have been impossible to hold the attention of these men for such a long period.

Jack Williams and Harry Shinn were coupled off in the laboratory work. While other groups found it difficult to check out with any great degree of accuracy on specific gravity tests, the Deval abrasion tests, etc., the Williams-Shinn section checked out with a degree of accuracy that even the professor in charge of the tests was somewhat skeptical. Williams-Shinn, however, still contend that there was a high degree of accuracy in their work which produced the results. Of course, it is no easy matter to take fifty odd pieces of stone and make them weigh exactly 5000 grams, but it can be done, claim Williams-Shinn. It seems that the section Harry Robbins was in in Laboratory work was about to check out and they claim that somebody took a piece of stone that they had been working on, so that they could not check out properly.

February 8, 1922.

Professor M. S. Ketchum, Director,
Department of Civil Engineering,
University of Pennsylvania,
Dear Sir:

The men now completing the Brief Course in Highway Engineering given by the Civil Engineering Department (January 23 to February 10, 1922) feel so greatly bene-



(Mullica Marshes)
In some places as much as twenty feet of material was needed on account of continued sinking

fitted by the exceptionally well arranged course and the unusually practical instructors who have, at considerable personal inconvenience, devoted their time for our benefit, that we desire herewith to express our sincere appreciation of the course and of the practical way in which it has been presented.

By outlining the principles involved in Highway Engineering in an informal way, and in inviting discussion, you have, in our opinion, reached the class of men of which the course is composed, and, in addition to the concrete information that has been imparted to us, have inspired us to brush up on "practical theory."

It would be very much appreciated if the contents of this letter could be conveyed to the members of the staff of the Civil Engineering Department and the non-resident instructors who participated in the instruction of the course.



What Wisconsin Is Doing in Roads— 1651 Miles

The figures at hand—they are not complete—show that Wisconsin's road program for 1922 provides for the construction of 426.2 miles of concrete road. This will even surpass the big concrete road program of 1921. The year's plans provide for the improvement of 902 miles of road with gravel surfacing and 329 miles with miscellaneous types. The gang maintenance operations, which will run to over 1,000 miles, are not included as the figures are not available.



"Sharp Turns"

By JAMES W. BROOKS

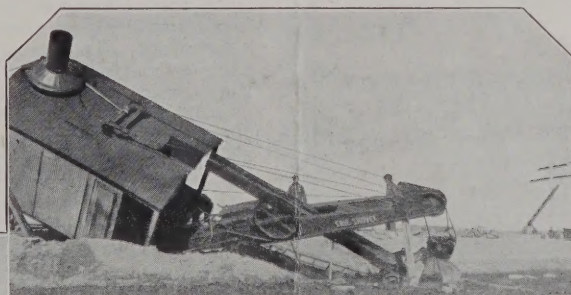
Bad roads collect toll on every turn of the wheel and give no receipt.

Unimproved roads are highway robbers and the wonder is why so many folks stand for a continuous performance in hold ups.

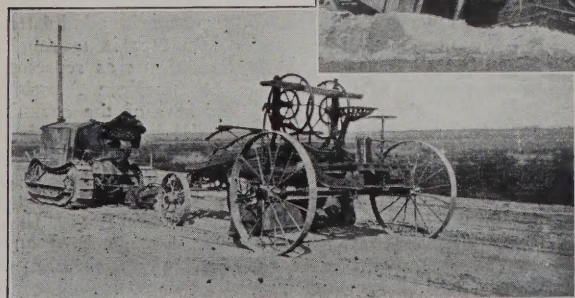
The merchant who gambles a page advertisement on the weather and bad roads, and then declines to support the good roads committee of his town is a gambler indeed.

Paved roads are the best forms of retail trade insurance, and annual renewals cost far less than on any other policy in road construction.

(Mullica Marshes)
"Over the top"—or rather, over the edge; but five hours of hard work put it back.



(Below) *Shaping up the road with a tractor and scraper; and removing the 24 inch gauge railway track.*



The Highwayman

One Item in Good Roads Bill Which Should Be Eliminated

There is one item in the public's road bill which could be eliminated to the financial advantage of the taxpayer, were it not for that perennial pest—the partisan politician. The *Digest* has had occasion to use the branding iron on this animal, and there seems to be no reason for letting the iron cool. The *Cincinnati Enquirer* uses it to advantage, in touching upon attempts in that State to discredit the state highway department in its policies of substantial construction as the only course in protecting highway investments. Says the *Enquirer*:

"Experts appointed by associations representing the civil engineers and the confederates of the good roads movement organizations have, at the request of Governor Harry L. Davis, made examination into the charges that wasteful and profligate methods have been employed in building, under state supervision and account, part of the new highway between Columbus and Cleveland.

"These experts have found little to criticize and much to commend in the undertaking, considering the unusual conditions surrounding the situation inquired into. Specifically the innuendo of dishonesty is repelled. It is now incumbent upon those who are responsible for the allegations of misconduct to produce the testimony upon which these assertions rests, it appearing from their comment that they do not consider the report of the examiners to be decisive of any issue raised.

"In America there seems to have been lost that characteristic Anglo-Saxon trait of pursuing questions to the ultimate, the British notion of 'seeing things through.' Nothing is more common these days than the heralding of flaming accusations against public men and vocally vicious assaults upon private citizens; and their dismissal in whispers or the still, small voice. Our exaggerations come in the portal like elephants and go out through the keyhole like gnats. Psychologists would say

(Continued top of Page 7)

Down below, the Highstown-Freehold road (Route 7) showing how the wind piled up the snow (Above) Another bank, (Route 1, Robbinsville) which, considering the size of the big truck, gives one an idea of the depth of the drifts



After the January 28 blizzard—Route 1, Hamilton Square, N. J. But—

Clearing 500 Miles

When, last fall, State Highway Engineer Tom Wasser announced that "The highways of New Jersey must be kept open to traffic regardless of weather conditions", the General Public, remembering former years, added to this statement, as a mental reservation, the words "within reason!"

When, however, Mr. Wasser began to organize the forces of the Highway Department for the job ahead of it; and also reached out to enlist the co-operation of every road contractor in the State, it became evident that the job would be undertaken on a scale which had never been attempted before.

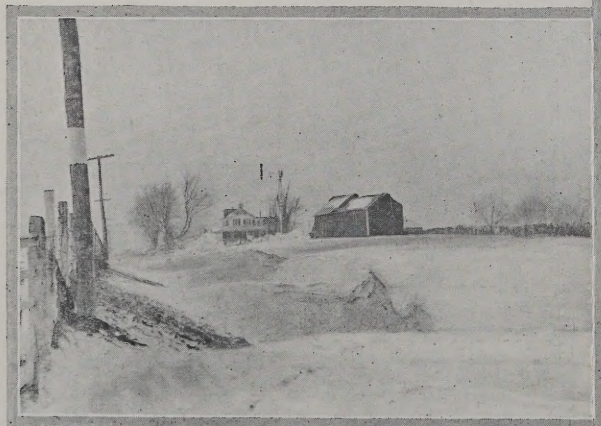
All this preparatory work was done far in advance—and then for a while it looked as if "there wasn't goin' to be no snow". There

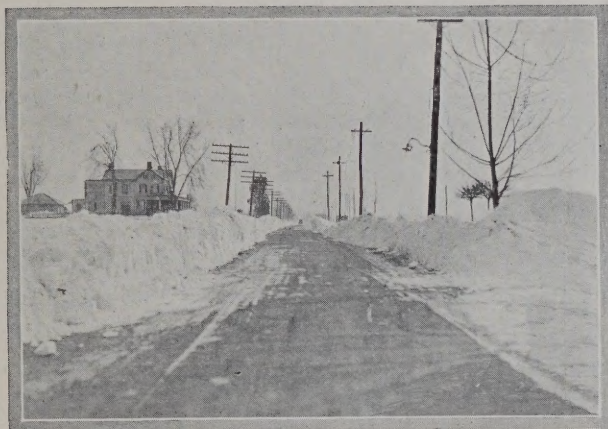


Wallace Considering

The Secretary is considering a tentative draft of rules and regulations for the administration of the Federal Highway Act, approved last November, under which \$75,000,000 is appropriated for the construction of Federal-aid roads, but will not promulgate them until he has conferred with representatives of the State highway departments. The Secretary is impressed with the need for closest possible cooperation between the Federal Government and the States in the development of the Federal-aid highway system called for by the act, and the value and serviceability of the system will not be jeopardized by a hasty decision as to the roads which will comprise it or the regulations to be followed in carrying out the purposes of the legislation.

In formulating the fundamental rules which will govern the States and the Federal Government in administering the law, the Department of Agriculture is seeking the counsel of the State highway departments as represented by the executive committee of the American Association of State Highway Officials. Members of the committee are: George P. Coleman, State Highway Commission, Virginia; Paul D. Sargent, Chief Engineer, Maine; Austin B. Fletcher, State Highway Engineer, California; W. R. Neel, State Highway Engineer, Georgia; Thomas H. MacDonald, Chief of the Bureau of Public Roads, United States Department of Agriculture; George E. Johnson, Secretary, Department of Public Works, Nebraska; Ira





Here is the same road (at another spot) less than twenty-four hours later

Roads in 24 Hours

were a couple of little preliminary skirmishes, to be sure, but nothing severe enough to give a real test to the perfected snow-removal organization. With the end of January, however, came one of the severest blizzards the State had ever experienced. Unlike previous storms, it came from the south. Even this, however, did not catch the snow removal forces napping. Harold Noyes, the Weather Man, was right on the job; and twenty-four hours in advance predicted "heavy northeast storms coming from the south". Alex Muir took the night watch (having no wife, he was allowed to stay at the office!) He said it seemed as though he had charge of a highly trained football team, on the eve of the "big game" of the season. After weeks of waiting he felt



Federal Road Program

R. Browning, Member of Highway Commission, Utah; R. J. Windrow, State Highway Engineer, Texas; W. D. Uhler, State Highway Engineer, Pennsylvania; and D. P. Olsen, Director, Bureau of Highways, Idaho.

Pending definite decision upon details of the Federal highway system, each project submitted by the States will be examined with the utmost care by the Bureau of Public Roads to determine whether it is likely that the roads proposed will come within the Federal system as finally selected. The department regards the approval of this system as of great importance. Each project submitted in advance of the definite decision upon the system as a whole will have an effect in fixing particular routes and so determining the system.

Each State highway department has been requested to submit as soon as possible to the Department of Agriculture a tentative map showing routes proposed for primary and secondary systems. In examining and passing upon these recommendations special consideration will be given to social and economic question involved, such as service to population, established trend of traffic, existing industries, natural resources, etc. In considering plans for individual projects special attention will be devoted to grade crossings, gradients, curvatures, bridges general drainage conditions, location of material supplies, etc., but in the selection of the system the broader social and economic principles will govern.

that this was a form of childishness. At the lowest it is not manly and in practice it produces moral degeneration and disrespect for government. The community should protect its honest public officials and not forever continue to expose them to the wild beasts with the callous understanding that they must defend themselves.—*Highway News Digest.*



they might be over-trained. The suspense and tension throughout the entire organization was much more wearing and nerve-racking, than the fight itself after the snow actually began.

The chief's principle in snow fighting is to begin when the snow begins and *keep ahead of it*. In some places, due to the extreme severity of the storm, it was not possible to do this; but the contractors, with the assistance of the maintenance forces and the equipment forces, were able to keep the main roads open and on all the main highways there was practically no interruption to traffic. As Ed. Reed put it "everybody was on the job; truck drivers, clerks, stenographers, bookkeepers, auditors, telephone operators, engineers, inspectors, foremen, assistant foremen, maintenance men, mechanics; in fact everybody in the organization co-operated to open the roads for the use of the public, and they worked to make Jersey Highway Service as famous as Jersey Justice has been for years."

There were some pretty stiff drifts, as may be seen from the accompanying photographs. The storm was about as severe a one as is likely to be encountered again for many years. The way in which the traveling public appreciated the service rendered by the Highway Department and the contractors is shown by letters which appear elsewhere in this issue and others which we will use next month. This appreciation has meant a lot to the boys on the job, many of whom worked all night to the end that traffic on the main highways might be continued "as usual."

Above, Route 7, Highstown-Freehold, drifts piled over the top of the car. Below (Route 1, Hamilton Square—Robbinsville) a good example of the splendid work done by the snow plows belonging to the Department.

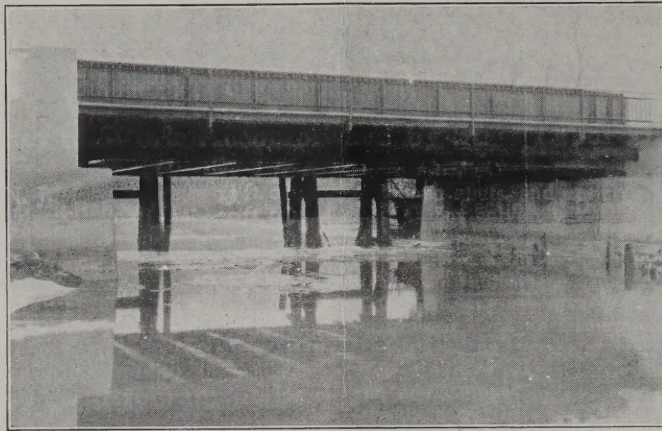


The Highwayman

Good Bridges Are as Important as Good Roads

The old saying that a chain is only as strong as its weakest link, holds true in road construction.

You know what it is to go sliding along a good road, and then come within an ace of breaking a spring—to say nothing of your neck



*Bridges like this are the counterpart of good roads.
(The new bridge at Black's Creek, Route 2, Section 2.)
(Bridge in background, supported by piles, is trestle-bridge
for trolley-line.)*

—on a bad bridge. Or, perhaps, even run the risk of breaking through it.

The Highway Department has been making a thorough survey of bridges throughout the State, and is planning bridge construction to keep pace with the road program, as may be seen from the following.

Program of Bridge Construction

Route	M.P.	Location	Span	Road	Type of Bridge
5	26	Budd Lake	12 ft. 0 in.	30 ft. 0 in.	R. C. Box culvert with bottom slab, balustrade & extension
5	25.3	Budd Lake	10 ft. 0 in.	30 ft. 0 in.	R. C. Box culvert with bottom slab, balustrade and extension plus four wing walls.
5	24	West of Budd Lake	31 ft. 6 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam floor, R. C. slab and balustrade.
5	23.8	West of Budd Lake	11 ft. 4 in.	30 ft. 0 in.	R. C. box culvert with 4 wing walls. Parapet at each end of culvert.
5	21	East of Hack'town	31 ft. 6 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam and R. C. floor and balustrade.
5	20.8	East of Hack'town	31 ft. 6 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam and asphalt block floor and balustrade.
5	20.7	East of Hack'town	31 ft. 6 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam and asphalt block floor and balustrade.
5	20.1	East of Hack'town	22 ft. 0 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam and asphalt block floor and balustrade.
9	19.6	East of Lebanon	21 ft. 6 in.	30 ft. 0 in.	Concrete abuts. and wing walls I beam and asphalt block floor and balustrade.
9	10.2	West of Clinton	4 ft. 0 in.	16 ft. 0 in.	Temporary bridge erected to maintain traffic.
9	10.3	West of Clinton	5 ft. 0 in.	16 ft. 0 in.	R. C. Box culvert curved wing walls. Side road culvert.
9	8.4	East of West Portal	10 ft. 0 in.	30 ft. 0 in.	R. C. Box culvert curved wing walls. Side road culvert.
9	10.6	West of Clinton	68 ft. 8 in.	30 ft. 0 in.	R. C. Box culvert, outlet slab, culvert follows up slope. Plate girder, conc. abuts, wing walls, R. C. floor, curb and drains by S. L.
9	11	West of Clinton	13 ft. 0 in.	30 ft. 0 in.	Conc. abuts. and wing walls, F. C. slab and balustrade. Temporary bridge erected.
9		Dunellen, N. J.	2 ft. 0 in.	41 ft. 0 in.	R. C. box culvert with 1 catch basin. Under trolley tracks
13	12.4	Kingston, N. J. 2 at	12 ft. 0 in.	20 ft. 0 in.	Placed new stringers and floor. Pointed masonry.
1		So. of Elizabeth	4 ft. 0 in.	40 ft. 0 in.	Box culvert cobbled bottom. Galv. railing both sides.
1	.4	Trenton, N. J.	17 ft. 4 in.	40 ft. 0 in.	Pointed abuts. placed R. C. slab with sidewalks and balustrades.
5	24.1	White Horse, N. J.		19 ft. 0 in.	Pointed abuts. and center pier at W. L. and bridge seats.
7	8	West of Freehold,	9 ft. 3 in.	30 ft. 0 in.	R. C. box culvert with 4 wing walls and parapet at each end.
7	8.1	West of Freehold	5 ft. 10 in.	30 ft. 0 in.	R. C. box culvert with 4 wing walls and parapet at each end.

Summary of Work Accomplished by State Labor Division

(Continued from January number.)

Route 1, Section 2, Menlo Park-Rahway

63 Norway maple trees were planted along the property of the Colonia Country Club in accordance with an agreement with them whereby they gave us right of way for the highway along their property. Ten of these trees died during the year, and were replaced by us in November.

The railroad tracks of the P. R. R. into the U. S. Hospital at Colonia, N. J., were taken up where they crossed the new concrete highway, and the gap in the pavement filled with reinforced concrete. Work was performed by local labor.

Route 9, Section 4, Dunellen

This improvement consisted of the grading and paving of 2525 feet of the section through the borough of Dunellen between Madison Avenue and Jackson Avenue. The pavement consists of two 12 inch strips of 8 inch bar reinforced Portland Cement concrete on either side of the car tracks, and necessary concrete curbs and intersections. The trolley tracks were lowered to the new grade and the ballasting done by the State Labor Division forces, the pavement between the rails to be done by the Public Service Co. Local labor was used on this work, and the principal construction items were:

3,297 cu. yds. of earth excavation

7,278 sq. yds. of reinforced concrete pavement.
2,773 lin. ft. of concrete curbing
2,773 lin. ft. of trolley track re-located
842 sq. yds. of stone block pavement.

This work was started late in October and will be finished this year.

Route 2, Section 2, Prince & Burlington Sts., and Park & Prince Sts., Bordentown.

This work consisted of lowering sidewalks to meet the grade of the new highway, resetting curbs, rebuilding porches, new retaining walls, planting trees, and grading and approaches to the new highway at that place. Local labor was used on the work.

Route 2, Section "A" Bordentown (near Thornton Creek)

Catch basin was built and 36 ft. for 15 in. T. C. tile drain to the basin was laid in order to remedy bad drainage conditions.

Route 2, Section 2, Fieldsborough

This improvement included grading of property fronts along the new highway, building of concrete steps, sidewalks, driveway intersections, retaining walls, and necessary guard rail.

Route 10, Section 1-A, Edgewater

The work at this place consisted of removing several thousand cubic yards of loose rock from the cliff overhanging the road leading from Fort Lee Ferry to Cliffside Park, the placing of wire guard fence over pipe guard rail on outer edge of road ascending cliff that was not protected by stone wall, underpinning stone wall along top of cliff, raising elevation of sidewalk in front of Carlson property along river road. The work was performed by local labor.

Route 1, Section 3, Robbinsville-Windsor

This improvement consisted of paving space between concrete pavement and concrete gutters with stone blocks

grouted with cement mortar, and was made with local labor. The principal construction item was 1610 sq. yds. of block paving.

Route 6, Mullica Hill

This improvement consisted of laying new 12 ft. concrete shoulders on either side of the concrete pavement through Mullica Hill, new concrete curb and gutter, and necessary drains, basins, sidewalks, etc. The work was performed by local labor, and the principal construction items were:

1,900 sq. yds. of concrete pavement and driveways
664 lin. ft. concrete curb
1,900 sq. yds. earth excavation
325 ft. of 15 in. storm drains.
3 manholes.

Leesburg Camp

The useful buildings and equipment at the old Prison Camp at Leesburg were dissembled by local labor and shipped to Andover, N. J., to complete the camp at that place, which was turned over to the county.

Andover Camp

The camp buildings were received from Leesburg and set up at this place by local labor, and the water and sewage systems completed, and the complete camp sold to the county.

Fernwood Service Station

The sewage disposal system, the cement floor and the foundations of the 65 ft. x 100 ft. Paint Shop, and the concrete foundation, walls and piers for the 100 ft. x 400 ft. main building were built by State Labor Division forces.

Rahway Garage

The concrete foundation and piers of the old garage were broken up and removed, and the building sections and equipment shipped to Fernwood, the new location for the State Highway Garage.



**You'll Bless the Day
that You Met Up with "Dragon"**

Every contractor knows what it is to have "concrete trouble."

A little of it goes a long way, and makes profits go glimmering.

Don't risk your profits on delayed cement deliveries.

We make a point of prompt shipments.

But what's more to the point; *we see that it gets there!*

And Dragon cement has been good reliable cement for a third of a century.

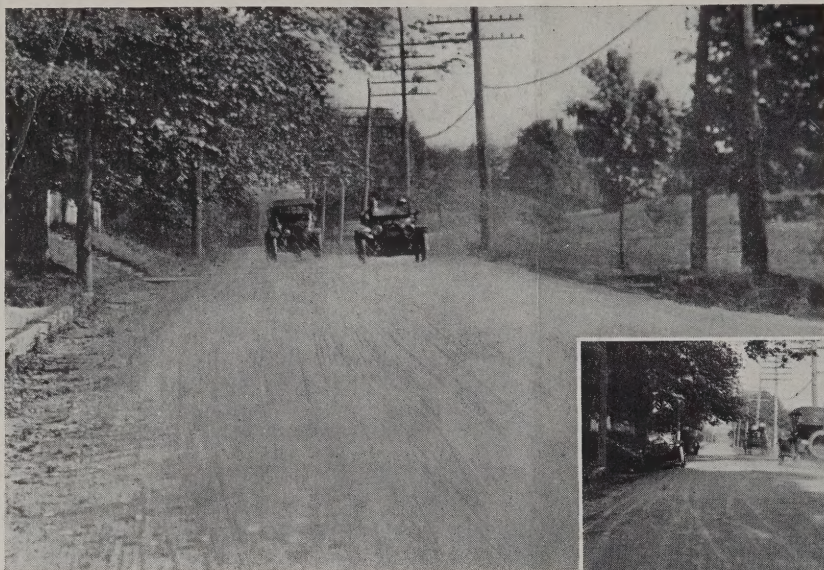
"For Cement you can depend on—use Dragon"

Lawrence Cement Co.

PHILADELPHIA

302 Broadway, NEW YORK

The Highwayman



AFTER—Bernardsville - Blazier's Corners Road, Somerset County, N. J., after paving with "Tarvia B."



BEFORE—Bernardsville - Blazier's Corners Road, Somerset Co., N. J. Condition of macadam before use of Tarvia

Save the old roads— then on with the new—

Every Spring finds scores of communities inaugurating systematic programs of salvaging the roads already built—putting them in shape to handle the growing traffic before new construction is begun.

The economy of such a sound Good Roads Program appeals to taxpayers everywhere.

How about the roads in your community? Quite likely the old, worn-out macadam that you have thought worthless can be quickly and cheaply restored to usefulness by a traffic-proof Tarvia top.

There may be other stretches that need nothing more than the time of a patrol crew to patch them with "Tarvia-KP"—or a simple treatment of "Tarvia-B" to pre-

serve the surface and make it traffic-proof and weather-resisting.

Tarvia roads are mudless, dustless, waterproof and automobile proof 365 days in the year. Their low first cost and economy of maintenance places good roads and their many advantages within reach of the most modest community.

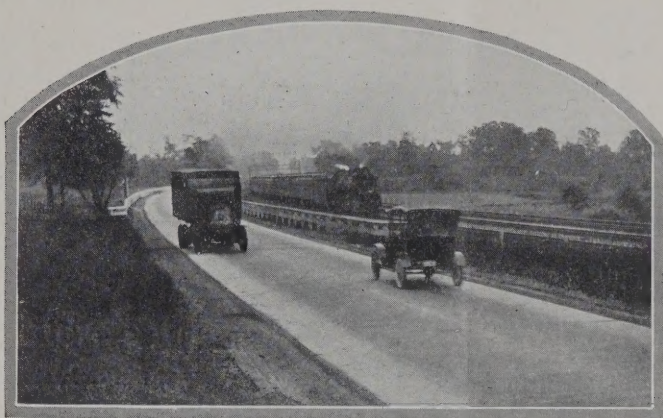
This company has a corps of trained engineers and chemists who have given years of study to modern road problems. The advice of these men may be had for the asking by anyone interested. If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will be given prompt attention.

Tarvia
For Road Construction
Repair and Maintenance

The *Barrett* Company

40 RECTOR STREET, NEW YORK CITY

C. A. Baker, Jr., . . . No. 323-Closter
H. M. Smith, . . . No. 96M-Riverton
C. C. Randolph, . . . No. 2466-Plainfield
Ashley Buiner, . . . No. 2232-Plainfield



(Courtesy Portland Cement Association)

“Here’s the Bond = but Where’s the Road”

That’s a famous question—but you never heard it asked about a road made with VULCANITE.

No Sir! *Vulcanite* roads *stay* right because Vulcanite Cement is *made* right.

Our plant at Vulcanite (Warren Co.) has a capacity of *two million* tons a year.

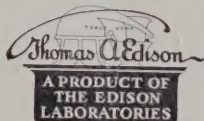
“Let’s get together and talk Cement”

VULCANITE PORTLAND CEMENT CO.

PHILADELPHIA

BOSTON

NEW YORK



Our Production Capacity is Your Guarantee of Safety

Good weather; the gang broken in and working fine; the paving machine operating to full capacity; the job moving on schedule time; a good profit in sight;—AND THEN—

Your cement fails to arrive!

Result: idle men; idle trucks; idle machines; but *overhead* going right on and eating up profits.

We are working *now*, 24 hours a day
in order that we can make immediate
shipments in any quantity, any time.

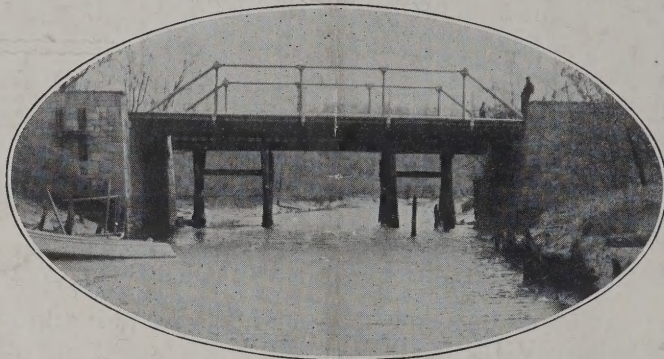
EDISON PORTLAND CEMENT CO.

NEW YORK

BOSTON

PHILADELPHIA

ALONG THE ROAD



This bridge at Black's Creek, Route 2 Section 2, was replaced by the bridge shown on page 8. The Department is replacing bridges of this type as rapidly as possible.

Spring Roads

And Other Causes for Cusses

Well, I suppose *you've* been through it again, too.
That photograph on the first page looks kind of natural, doesn't it?
But after you had paid for the team to pull you out, and figured in the wear on your car, and the tear on your clothes, did you add that sum to your "road taxes" for the year?
You should have done so, for expenses due to bad roads are really a part of your "road tax."



The "peepers" are out again; and they will soon be followed by the "croakers", who always begin to "tune up" in the spring, and predict how the country, or state, or county, is going to the everlasting daschunds because of the money being spent on roads. But fortunately the good roads will be here, long after the croakers have "croaked" and departed from this vale of tears to parts where paving is all done with gold—or good intentions.



The Eternal Feminine

He—My dear, when I look over our expense account for the car and see how much it is, I can't help being alarmed.
She—Don't blame me; I told you not to keep an expense account!

Speed!

*He never could get a car
Quite fast enough for him;
He always wanted more
Speed!—pep!—vim!*

*At last he found one that could do
Ninety an hour, or worse—
But now, alas! he's through.
He's riding in—a hearse."*

—F. F. R.



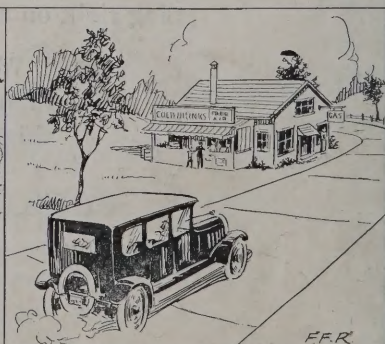
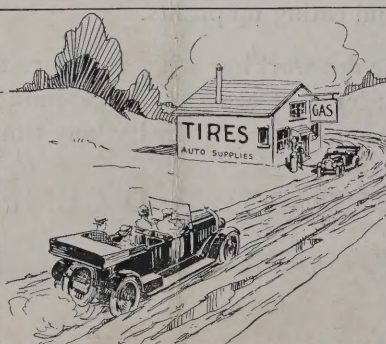
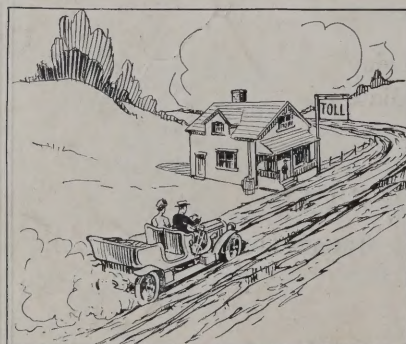
Your county, your town, will never "get anywhere" without good roads to get there on.



One of life's business riddles is why some folks kick about the cost of highway improvement, and then go on supinely paying double for lack of it.



The taxpayer who wants loads held down to fit obsolete roads rather than pay his share in building modern types, usually has very little to haul—with himself thrown in.



ARE YOU STILL PAYING TOLL?

You remember the old toll gate? Not much better is the travel on a poor road, when you have to buy "gas" two or three times on a short trip. "The best road's the cheapest."

Road Tips



MONTHLY BULLETIN OF DETOURS

Adopted by the New Jersey State Highway Commission

Corrected to March 1, 1922

All detours posted with signs and blazed with "Arrows"

(Color signals to right will be used along all State roads as soon as possible.)

ROUTE NO. 1—Rahway-Elizabeth: Union County

Use Route No. 1 which is open to Chestnut Street, Roselle. Then go over Chestnut Street to Route No. 9 at Roselle Park; and thence over Route No. 9 to Elizabeth.

ROUTE NO. 9—Perryville to West Portal: Hunterdon County

Via Clinton, Glen Gardner, Hampton, Asbury, West Portal

ROUTE NO. 12—Denville-Parsippany-Pine Brook: Morris County

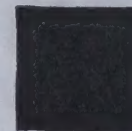
Denville, Tabor, Morris Plains, Morristown, Whippany, Hanover, Livingston, Roseland, Essex Fells, Caldwell and Pine Brook.

ROUTE NO. 12—Phillipsburg to Port Colden: Warren County

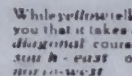
Via Phillipsburg, Bloomsbury, West Portal, Asbury, Washington and Port Colden.



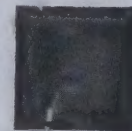
This color blue on signs or signs indicates that road is running North and South



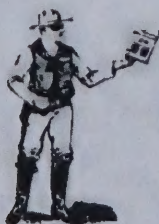
Red shows that it lies East and West



While yellow tells you that it takes a diagonal course south-east or north-west



And brown indicates that it takes a diagonal course north-east or south-west



For You— "The Highwayman"

Do you use roads? Do you want to know where they are being built, and what detours to take, each month?

Then send, TODAY, to

The Highwayman
New Jersey State Highway Department
Trenton, N. J.

Just ask to be put on The Highwayman's list. A postal will do.

Turn Over!

On the Back You'll Find the Map.



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